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A COMPARISON OF MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL IN YOUNG WOMEN WITH AND WITHOUT A SEXUALLY TRANSMITTED DISEASE

by

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Abstract

The purpose of this descriptive study was to measure and compare differences in young women with a sexually transmitted disease (STD) and young women without a sexually transmitted disease on the internal, chance and powerful others scales of the Multidimensional Health Locus of Control (MHLC). Three directional hypotheses guided this study: (1.) Young women with an STD have a higher Powerful Other Health Locus of Control (PHLC) than women without an STD. (2.) Young women with an STD have a higher Chance Health Locus of Control (CHLC) than women without an STD. (3.) Young women without an STD have a higher Internal Health Locus of Control (IHLC) than women without an STD. The Health Belief Model was the theoretical framework. Young women aged 18 to 25 comprised the non-random convenience sample (N = 33) at three public health clinics. Health Locus of Control beliefs were measured using the MHLC Instrument. Matched pairs were analyzed using the *t*-test procedure ($p < .05$). There were no significant differences between young women with an STD and young women without an STD (CHLC, $p = .085$, PHLC, $p = -1.79$, and IHLC, $p = -1.50$); therefore, the researcher rejected the directional hypothesis and accepted the null hypothesis. The researcher concluded that there are no significant differences on these

three belief orientations when comparing these groups of young women. An implication for nursing is to include specific educational measures relevant to STD prevention for women who have either internal or external locus of control beliefs. Recommendations were made for replication of this study with a larger, more racially and socioeconomically diverse sample; development of a valid and reliable instrument for measuring locus of control beliefs specific to women with high-risk health practices; implementation of qualitative research exploring the health beliefs of young women engaged in high-risk sexual behaviors; assessment of the Health Locus of Control in practice with respect to education and counselling; and promotion of the FNP as a collaborating member within IRB's to serve as an advocate for issues related to women's health.

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Chapter 1

The Research Problem

The following research sought to gain a better understanding of young women's health beliefs and consequent health outcomes at a time when morbidity and mortality associated with sexually transmitted diseases (STD) continues to rise. Of the many conceptualizations and theories introduced to explain what will enhance positive health behavior, two have been of particular interest in examining predictors of preventive behaviors: Wallston's Multidimensional Health Locus of Control (MHLC) and The Health Belief Model. This study examined MHLC, the psychological orientation or belief, that health is or is not determined by individual behavior in a population of young women with and without a sexually transmitted disease.

Introduction to the Problem

Even though STD's are totally preventable, they have continued to grow as a public health problem. National and state statistics have revealed only some of the magnitude of the STD growth. Chancroid, Herpes Simplex Virus (HSV), gonorrhea, syphilis, chlamydia, and Hepatitis B (HBV) are communicable diseases that are reportable to the Centers for Disease Control (CDC). Even though gonorrhea and chlamydia

should be reported to the CDC, it has been speculated as being underreported (Telephone interview, Dr. McFarland, State Epidemiologist), thereby only reflecting a portion of the actual magnitude.

Morbidity and mortality rates that have been associated with some sexually transmissible diseases have been on the rise. Hepatitis B and Human Immunodeficiency Virus (HIV) are two such diseases that may be sexually transmitted. The CDC (1993) reported the infection rate for HBV at 200,000 to 300,000 persons annually. The CDC (1993) has estimated the percentage of individuals that have contracted HBV by sexual transmission was between 33% to 66%. In the United States alone, the CDC (1993) estimated 5,000 deaths were associated with complications of the Hepatitis B virus. Additionally, pregnant women have a 10% to 85% transmission rate to their neonate during the perinatal period (CDC, 1993). Neonates were equally as likely as their mother to have liver cancer and cirrhosis, two of the morbid complications associated with this infection.

Syphilis and Hepatitis B rates reflect over a 132% and 165% increase, respectively, in the state for one year (Mississippi Morbidity Report, 1994). Reported cases of gonorrhea in the state have remained essentially unchanged for the same year-to-date totals. The high rates of syphilis and hepatitis B, which can be sexually transmitted, commands

preventive measure be taken to decrease the high morbidity and mortality associated with these diseases.

Specific STD's with open lesions, such as syphilis, herpes simplex virus and chancroid, have been associated with an increased risk for transmission of the HIV virus (CDC, 1993). Even though the total number of Acquired Immune Deficiency Syndrome (AIDS) cases contracted by heterosexual activity has only been estimated at 5%, there has been an alarming rise noted in recent years. From 1991 to 1992, the rate of heterosexual transmission of HIV has increased to 9%. This national rate has represented an increase of 80% for that one year (CDC, 1993). In Mississippi, nearly half of the AIDS cases (47%) in women in 1993 were by hetero-sexual transmission (Mississippi Morbidity Report, 1994). This represents nearly a two-fold increase from the 1987 rate of 25.0%.

In light of the continued STD epidemic, it has become apparent that current preventive measures have been inadequate. Continued research into health beliefs associated with health behavior is imperative for the nation's youth. Limited studies to date have examined specific locus of control (LOC) health beliefs as related to sexual knowledge and behavior in at-risk populations (Sandler, A.D., Watson, T.E., & Levine, M.D., 1992; Aruffo, J.F., Coverdale, J.H., Pavlik, V.N., & Vallbona, C., 1993; Whately, J., 1991). Sandler et al.'s (1992) study explored

personality and cognitive traits associated in sexual decision making in adolescent females. Characteristics of females not using contraception reliably compared with adolescents using contraceptive measures were statistically significant for LOC, verbal reasoning skills and knowledge related to sex and contraception. Adolescent females who inconsistently used contraception had more external LOC, less verbal reasoning skills, and knew less about sex and contraception over and above the effects of socioeconomic status ($p < .05$).

Another study, which focused on AIDS transmission knowledge and preventive behaviors in a low socioeconomic, minority population, found similar results with respect to health LOC and knowledge of AIDS transmission behaviors (Aruffo et al., 1993). IHLC and a higher educational level were associated with more AIDS knowledge. Analysis of variance further revealed HLOC was an independent predictor of AIDS knowledge, over and above the effect of education. Aruffo et al. advocated further exploration between HLOC and AIDS risk-taking behavior in at-risk populations.

In another study characteristics associated with high risk behavior were described. Whatley (1991) examined LOC and social network in relation to risk-taking behavior in an adolescent population. The researcher found the majority of the variance in risking-taking behavior was attributable to the Powerful Others Health Locus of Control variable. The

PHLC score was statistically significant ($p = .005$) for risk taking behaviors in the adolescent population, whereas the social network was decreasingly important in later adolescence.

The literature indicated empirical evidence supporting an interrelationship between the health LOC concept and at-risk behavior. (Sandler, A.D., Watson, T.E., & Levine, M.D., 1992; Aruffo, J.F., Coverdale, J.H., Pavlik, V.N., & Vallbona, C., 1993; Whately, J., 1991). The increased morbidity and mortality associated with STD's in populations of young women have been well established. In light of the limited information on at-risk health behavior in young women, and the current STD epidemic, the following research was conducted. This research explored the health LOC orientations in relation to measured health states indicative of at-risk behavior in populations of young women.

Theoretical Framework

The HBM (Rosenstock, I.M., Strecher, V.J., & Becker, M.H., 1988) has served as the conceptual framework in this research. The HBM has been used to define, explain and predict the likelihood of preventive action related to health, or non-health practices. The factors and motives involved in health-related behavior are reflected in the concepts and relationships within the HBM as described below (Mikhail, 1981).

The HBM predicts the likelihood of preventive action, based on two individualized assessments: (1.) the perceived threat and (2.) perceived benefits versus perceived barriers. Prior to the action, individuals assess the perceived benefits and perceived barriers and contributing factors to that action. Contributing factors to this assessment include demographic variables, sociopsychological variables, and structural variables. Additionally, an assessment of the perceived threat, which is based on the personally perceived seriousness and susceptibility, results in the ultimate decision to engage in a health behavior.

Rosenstock, Strecher, and Becker (1988), authors of the HBM, have acknowledged two additional important variables for inclusion in the HBM: Locus of Control (LOC) and Self-Efficacy. These variables are thought to have predictive value in explaining health behavior, and have been a special focus of this current study. Rosenstock et al. believe the locus of control construct and self-efficacy concepts are assessed within the perceived benefits and barriers within the HBM, and the sum of the perceived susceptilibility and perceived seriousness, that is, the perceived threat. The two concepts, LOC and self-efficacy, are quantifiably measured thereby being operationally defined as constructs.

Defining these variables within the HBM further discriminates the HBM's existing factors associated with health behavior. Utilizing the constructs with specific

populations and behaviors also may elucidate linkages within the generalized HBM. Such linkages are necessary in theoretical frameworks.

In addition to the LOC concept, self-efficacy also has been acknowledged as a factor relevant to health behavior. Bandura, a social learning theorist, defined the self-efficacy concept in the context of expectancy theory. Self-efficacy is the belief that one can succeed in a particular desired behavior. Self-efficacy is specific to given situations and behaviors (Sarafino, 1990). Bandura stated that both self-efficacy and LOC are necessary constructs for predictions of behavior.

In 1966, Rotter developed the initial locus of control (LOC) construct. From this original construct, other constructs such as the Health Locus of Control (HLOC) and Multidimensional Health Locus of Control (MHLC) were developed. LOC, HLOC, and MHLC have been applied in numerous studies investigating belief orientation and behavior. For purposes of clarification these three closely related constructs were discussed in more detail.

The original construct of orientation, LOC, was dichotomous, that is, either internally or externally oriented (Sarafino, 1990). This Internal/External (I/E) construct measures the belief that an outcome is or is not a direct result of an individual's behavior. Internally oriented persons believe their outcome, or reinforcement, is

the direct result of their behavior. Alternatively, externally oriented persons believe outcomes are under the influence of powerful others, chance, luck or fate. The LOC instrument consisted of eleven statements to which subjects gave graded responses on a Likert-like scale. (Wallston, Wallston & DeVellis, 1978). Persons with high scores on the LOC instrument attribute health outcomes to personal behavior, whereas low scores indicate the person attributes health outcomes to powerful others, chance, luck or fate.

This dichotomous conceptualization was utilized and applied to the area of health in 1976 by Wallston, Maides and Wallston. Wallston et al.'s (1976) hypothesis, rooted in social learning theory, stated that the specific behavior of seeking health related information was a joint function of internal health locus of control (the expectancy) and a high regard for health (the incentive or reinforcement).

However, as cited by Wallston et al. (1978), Levenson questioned the unidimensionality of Rotter's I/E scale in 1974. She argued that factors affecting external locus of control could be studied separately. Levenson described these factors as powerful others, luck, chance and fate. Working along these lines, the LOC construct was extended by Wallston et al. in 1978 to include the concept of the Multidimensionality of Locus of Control to Health. The Multidimensional Health Locus of Control (MHLC) attempts to describe an individual's belief of one's sense of control

over his health and the value or reinforcement this individual places on health. The importance of the MHLC scales lies in the fact that they have been predictive of various preventive health behaviors.

The HBM was chosen for the particular relevance that health behavior had with this research. The belief that personal behavior may or may not have an influence on health outcomes was measured with the MHLC instrument. The LOC was reflected in the perceived benefits versus perceived barriers, as well as the perceived susceptibility and seriousness of the threat. For example, based on the current literature, if an individual has a high IHLC, they hold the belief the outcome of their health is a direct result of the behavior. Therefore, a person holding an IHLC would perceive an STD as a threat to health, would perceive a sexually safe behavior as beneficial to health, and would thus engage in the preventive health behavior.

Persons with a high PHLC believe in other persons (doctors, nurses, family, or friends) influencing the health outcome or STD. Generally, this belief structure would likely be assessed in the benefits and barriers related to an STD. The PHLC orientation has been correlated with individuals engaging in behaviors associated with high-risk behavior. Whately (1991) found the PHLC variable was an independent predictor of risk-taking in adolescents. Therefore, individuals holding a PHLC view, which is

associated with few preventive health behaviors, would engage in more risky behaviors and STD's.

Individuals believing in chance, luck or fate as the controlling force rather than self do not make cognitive assessments related to health behavior. Since their health and illness are not influenced by personal control, there is no assessment related to the pros and cons of an action, or the susceptibility or seriousness of the STD. The belief is that ultimately, the illness or STD is not within personal control. Therefore, these individuals have great potential for at-risk behavior and associated STD's.

The HBM guided this study relevant to the process preceding health behaviors within the benefits and barriers, as affected by the perception of the threat of an STD. The MHLC scales served as an empirical measure of the belief orientation that is associated with preventive health behavior. The MHLC was utilized to empirically test the postulates that: persons with an increased IHLC engage in fewer sexually at-risk behaviors, thereby having no STD; persons with an increased CHLC or PHLC engage in more sexually at-risk behaviors thereby having an STD.

Significance to Nursing

Nurse clinicians, and other health care providers, have an important role in the prevention and treatment of STD's. Knowledge of the MHLC orientations in women with and without STD's may serve as a springboard for new STD preventive

measures. Practice and research implications of this research for nursing science include to increase the awareness of patient-care providers to the utility of individual orientations to health-related behavior, to develop LOC-specific educational programs, and to include application of the data to additional health research studies.

Increasing the awareness of patient health belief orientation by patient-care providers may enhance preventive care interventions. For example, the individual orientation could be utilized to formulate and guide the educational-therapeutic plan. Patients are more adherent to treatment measures that are congruent with their health belief system (Eachus, 1991). That is to say, patients with a more internal LOC are more accepting and adherent to teaching styles that express the internal health belief system.

Furthermore, educators also need to be informed as to the relationship of preventive health care and health belief orientations. Internal health locus of control orientations are associated with more preventive health behaviors, and thus healthier outcomes (Arakelian, 1980). Consideration of the orientation concept in educational program development would include measures to enhance the IHLC orientations. These measures might include the action-oriented, counseling, and the "reconstrual of stimuli" approaches (Arakelian, 1980). Enhancement of IHLC

orientations also may be useful in the educational plan for health-care providers.

In addition to increasing awareness of the MHLC concept among providers and educators, further research studies may be designed. Future research might include development of a specific instrument for health locus of control for women or for populations at risk for STD's. Research studies into educational techniques to enhance the IHLC orientations also may be conducted. Descriptive measurement of the individual's health locus of control, health state, and demographic data in this population may glean an interrelationship between those variables within this population of young women. These data might have value in guiding interventions and health educational program development.

In summary, the significance of health belief orientations to nursing science are in patient care, education and research. As a relatively stable personal characteristic, MHLC may be a factor in predicting and promoting healthier behavior, thus decreasing the morbidity and mortality rates associated with STD's. Health preventive and promotive programs could utilize these individually-based orientations or MHLC measurements to improve the likelihood of healthier behavior.

Assumptions

The following assumptions were inherent to this study:

1. People value health. This first assumption is implicitly related to Lewin's theoretical structure from which the HBM was adapted. Although this value can be empirically tested with the Rokeach's Health Value Measure, this was not included since the study was retrospective in nature (Telephone interview, Dr. Wallston).

2. An individual's behavior is rational. The second assumption of rational behavior, while often valid, has some exceptions. This is perhaps one reason the model has occasionally demonstrated inconsistent results.

3. Sexually transmitted disease was diagnosed by clinical/diagnostic study. Results were subject to human and laboratory error. Laboratory results that were not immediately known or associated with false positive and false negative results were not accounted for within the final diagnosis.

Statement of the Problem

There have been no research studies directed at investigating the health locus of control orientations and the interrelationship to high-risk sexual behavior in young women. Therefore, the purpose of this study was to measure the Multidimensional Health Locus of Control measurements in young women with and without a sexually transmitted disease.

Hypotheses

The following hypotheses guided this study:

H_0: There is no difference in the PHLC, IHLC and CHLC scores when comparing young women with and without an STD.

H_1: Young women with an STD have a higher powerful others health locus of control than women without an STD.

H_2: Young women with an STD have a higher chance health locus of control than women without an STD.

H_3: Young women without an STD have a higher internal locus of control than young women with an STD.

Definition of Terms

The following terms utilized in this study are defined below:

1. Young women: females between the ages of eighteen and twenty-five.

2. Multidimensional Health Locus of Control (MHLC): the construct used in measuring beliefs that health outcomes are or are not a direct result of their behavior. (Wallston, 1978). The three scales, internal locus of control (IHLC), powerful others locus of control (PHLC), and chance locus of control (CHLC), each consists of six questions to determine the degree to which individuals feel fate, chance, luck, powerful others or their own behavior determines health outcomes.

3. Internal Health Locus of Control (IHLC): measurement of the degree to which an individual believes health outcomes are a direct result of their own behavior.

4. Powerful Others Health Locus of Control (PHLC): measurement of the degree to which an individual believes health outcomes are dependent on powerful others, such as doctors, nurses, friends, family.

5. Chance Health Locus of Control (CHLC): measurement of the degree to which an individual believes health outcomes are dependent on chance, luck or fate.

6. Sexually Transmitted Disease: One or more of the following: gonorrhea, chlamydia, chancroid, syphilis, herpes simplex virus (HSV), hepatitis B, bacterial vaginosis and human papilloma virus (HPV). Diagnostic determination included clinical and/or laboratory findings as determined by the health provider.

Chapter II

Review of The Literature

Rotter's (1966) locus of control theory has been widely utilized in research to explain and predict behaviors. The locus of control model has evolved over the years and has been empirically tested in many studies related to behavior. Although the Health Locus of Control (HLOC) concept was initially developed and utilized to predict preventive health behaviors, the concept has been extended to other areas of health behavior.

A comprehensive electronic search of the National Library of Medicine and review of bibliographies, texts and government documents revealed few studies conducted with LOC orientations specific to health behaviors among populations of women. The rare studies that have addressed the LOC concept and health behavior or health status in female subjects are included.

The review of literature additionally revealed that the locus of control construct has been extensively used as an independent variable in health related behaviors, but only a few have studied the LOC construct as the dependent variable. Selected studies using the LOC construct as the

independent and dependent variable in the context of health behavior are presented. Literature utilizing the HLOC concept, the assumption of responsibility for health behavior and its consequences, and the relationship to various health behaviors/states are reviewed in this chapter.

Dependent Variable

In 1992, Sandler, Watson & Levine conducted a study to explain personality and cognitive aspects of sexual activity and contraceptive decision making in the adolescent female population. To shed light on differences between sexually active and not sexually active females, this study administered several standardized scales and tests to ascertain a range of cognitive aspects, rather than the usual focus on self-esteem. The LOC measure was one of two cognitive/personality related factors to reach significance between sexually active adolescents that had used contraception reliably and those individuals who had not used contraception reliably. Sandler et al. extended this research with the purpose of encompassing a broader range of measures to describe the cognitive aspects of adolescents that influenced sexual and contraceptive decision making. Sandler et al.'s review of literature resulted in the conclusion that previous research based primarily on self-esteem had resulted in inconsistent results.

Data collection was by self-report which included a comprehensive sexuality questionnaire, demographic data form and instruments for cognitive and personality measures. Cognitive and personality data measures included the following standardized instruments and scales: Wechsler Intelligence Scale for Children - Revised, (WISC-R), Halsted-Reitan Trails A and B, Wisconsin Card Sort Perseverative and Non-Perseverative Errors. Standardized scales also were utilized for measurement of self-concept, future time orientation and LOC (Sandler et al., 1992).

Independent variables included sexually active females who did and did not use contraception consistently and sexually inactive females. Dependent variables included the following cognitive aspects of decision making: contraception related knowledge and sexual related behavior, verbal reasoning and cognitive flexibility, self-esteem, locus of control and future time orientation. The hypotheses for this self-reported descriptive study were cited as follows:

> 1) Sexually active females who use contraception reliably know more about sex and contraception than do those who do not use contraception.
>
> 2) Sexually active females who use contraception reliably are more skilled at verbal reasoning and have more flexible problem solving abilities than do those who do not use contraception reliably or those who abstain from sex.
>
> 3) Sexually active females who do not use contraception reliably have lower self-esteem, more external locus of control, and less future time orientation than do those who abstain from sex or those who do use contraception reliably (p. 203).

Sandler et al.'s study was conducted at two community clinics. Adolescents with regularly scheduled appointments were invited to participate, with parental consent, in the study. Adolescents who had not had menarche, were mentally retarded, or scored for psychopathology on the Achenbach Child Behavior Checklist were excluded. Internal validity was optimized. Extraneous variables were minimized by collecting data in the same manner, and by the same researcher for all subjects.

Initial testing included the personality measures by self-report. These measures included the Piers-Harris Children's Self-Concept Scale, the Locus of Control Scale, and the Stein Future Events Test, all of which were standardized with good reliability and validity. The comprehensive Sexuality Questionnaire was developed by the researchers (Sandler et al., 1992) for measures of sexual and contraceptive knowledge and behavior, contraception and AIDS knowledge, and demographical data. The questionnaire was pilot tested yielding a 90% reliability level.

Subjects then took a battery of tests, including the WISC-R, Halstead Reitan Neuropsychological Battery and Wisconsin Card Sorting Test. The WISC-R correlates highly with performance IQ, the Halstead Reitan Neuropsychological Battery provides a measure of cognitive flexibility and efficiency of processing. The Wisconsin Card Sorting Test provides information about aspects of problem solving.

The sample (N=37) consisted of twelve to sixteen year old females who were identified from the questionnaire and belonged to one of three distinct groups. Group 1 was sexually active and using reliable contraceptive methods, Group 2 was sexually active, but using reliable contraception most of the time, and Group 3 was not currently or previously sexually active (Sandler et al., 1992).

Initial statistical analyses by multivariate covariance examined group, race and group-by-race differences in cognitive and personality variables. Groups 1 and 2 were different over and above the effects of socioeconomic status (SES) and age. Analyses of group means on the Wisconsin Card Sorting Test were not significant, but Group 1 did have higher vocabulary scores than did Group 2 thereby only partially supporting the second hypothesis.

Group 1 had lower self-esteem and less future time orientation than Group 2, but this difference was not statistically significant. Group 1 had higher locus of control scores than Group 2 ($p < .005$), over and above the effect of socioeconomic status ($p < .05$). The only variable in the third hypothesis to reach significance was that of locus of control ($p < .005$). Sexually active adolescent females who inconsistently used contraception had a higher External Locus of Control than sexually active adolescents using contraception consistently.

The LOC variables were predictive of risk-taking behaviors in this population of adolescents. Sandler et al. concluded this significant data can facilitate and guide the development of health education programs, as well as support the need for additional research studies in this at-risk population, with this concept of LOC.

Sandler et al.'s (1992) study suggested that the decision-making process for sexual decision making in the adolescent female population relies on accurate knowledge, verbal reasoning, and an internal locus of control. Therefore, adolescent females who lack these attributes are more likely to become sexually active and may be at increased risk for pregnancy and STD's.

A study to utilize the LOC concept with the MHLC instrument was conducted in 1991. Fleming and Barry (1991) examined differences between alcoholics and nonalcoholics in a primary care population. This study described the differences in the MHLC scores between the two groups, and increased the understanding of how these patients attribute their health outcomes. The hypothesis that alcoholics with a positive family history of alcoholism would view health as under the control of external forces, such as chance or fate, was partially supported.

Patients at a midwestern primary care clinic were contacted forty eight hours prior to the regularly scheduled

appointment times and were informed about the study. For one calendar month ninety-seven percent (N=280) of the patients gave consent for participation. Subjects were categorized into four groups following criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III). The DSM-III was utilized to assess individual alcohol dependence/abuse and family history for alcohol dependency/abuse. The four groups which were operationalized by using standardized instruments were: 1) alcoholics with a family history, (+)A (+)FH; 2) alcoholics without a family history, (+)A (-)FH; 3) nonalcoholics with a family history, (-)A (+)FH; 4) nonalcoholics without a family history, (-)A (-)FH (Fleming & Barry, 1991).

The hypothesis that group 1 would view health as being under the influence of external forces, such as fate or chance, was only partially supported. Alcoholics and nonalcoholics attributed health outcomes differently, on only one scale, Chance Health Locus of Control (CHLC). A post hoc Scheffe' paired test was significant at the $p < .05$ for groups one and three. Alcoholics with a family history of alcoholism scored significantly higher on the CHLC than nonalcoholics with a positive family history. The mean CHLC score for group one, (+)A(+)FH, was 19.07 out of a possible 36. Therefore, although statistically significant, the results were not strongly positive for the CHLC scale. Nonalcoholic adults with a positive family history for

alcoholism were least likely to attribute chance as influential in health outcomes, but alcoholics with a positive family history of alcoholism were more likely to attribute health outcomes to chance or fate.

Fleming & Barry (1991) recommended that attention be placed on the perceptions of health outcomes when developing interventions for families who live with alcoholism. The health outcome orientation, CHLC scale in alcoholics with a family history as compared to nonalcoholics with a family history was statistically significant. The researchers recommended that health providers need to be cognizant of this perceptual difference when developing programs for those who live with alcoholism.

The Fleming and Barry (1991) study parallels the associated concepts of health beliefs on a specific behavior-related disease. The statistically significant study illustrated persons with a specific behavior-related disease, alcoholism, were more likely to believe chance, luck and fate controlled the health outcome, rather than personal behavior. This researcher's study, which states that young women with a CHLC orientation are less likely to assess the perceived benefits or perceived threat of an STD and are more likely to engage in at-risk behaviors, parallels the postulate by Fleming and Barry (1991).

The health LOC concept has been widely utilized in preventive medicine to examine individual behavior that has

been directly attributed to the prevention of disease. Zindler-Wernet and Weiss (1987) conducted an ex post facto study to discern if there was a relationship between health locus of control beliefs and preventive health behavior. Proposed hypotheses were: 1) individuals with a history of preventive health behaviors would have less belief in chance influencing health or lower Chance Health Locus of Control scores than those without a history of preventive health behaviors; 2) individuals seeking Health Hazard Appraisal regarding health risks would have less belief in chance influencing health; and 3) individuals initiating preventive health behavior in response to health risk information would have less belief in chance than those who did not initiate preventive health behavior.

A Health Hazard Questionnaire was mailed to all 9,100 employees of a health sciences campus with an invitation to have an individualized Health Hazard Appraisal. Five-hundred of the 1,500 returned questionnaires indicated an interest in the Health Hazard Appraisal. They were contacted by telephone for an appointment and were mailed the Health Hazard Appraisal prior to the scheduled appointment time. The Health Hazard Appraisal form included 47 questions including demographical information, and questions regarding family history and life-style habits known to be risk factors. A single question regarding any preventive behavior they engaged in prior to the study was added to the 47 item questionnaire (Zindler-Wernet & Weiss, 1987).

The 206 respondents had height, weight, blood pressure and blood cholesterol measured during the twenty minute appointment time. Arrangements were made for a forty minute results session in two weeks after the initial screening session. After the forty minute results session, subjects were invited to participate in a study to determine influences on their health. Multidimensional Health Locus of Control (MHLC) Scales were given to the subjects, which were completed at home and returned by mail. A follow-up Health Hazard Appraisal was mailed to the subjects at three and six month intervals to assess if behavior change had been maintained.

Seventy-six percent of the sample were Caucasian, with 24% being non-Caucasians. Of the subjects, 67% were women, varying 9% above the total employee percentage. Subjects were aged from 25 to 69 years with an average age of 38 years. The average number of years of education for the sample was seventeen years.

Subjects with a history of preventive health behaviors had lower Chance Health Locus of Control (CHLC) measures or less belief in chance influencing health than subjects without a history of preventive health behaviors. Analysis with the t-test compared the two groups and was significant at the $p < .04$, thereby supporting the first hypothesis. The group with a history of preventive behaviors also had significantly lower Powerful Others Health Locus of Control

(PHLC) scores than the group without preventive behaviors ($p < .01$) and both groups had a high Internal Health Locus of Control (IHLC) orientation (Zindler-Wernet & Weiss, 1987).

Hypothesis 2 was supported for the CHLC, and also was significant for the PHLC and IHLC scales ($p < .001$). This hypothesis predicted subjects seeking comprehensive risk assessment would have less belief in chance influencing health than a normative group, as established by Wallston and Wallston (1981). PHLC scores were lower in the study group and IHLC scores were higher in the study group as compared to persons not seeking comprehensive assessments. Although the hypothesis was statistically significant, it also was viewed as having limited external validity.

The last hypothesis in the Zindler-Wernet and Weiss (1987) study proposed that subjects who initiated recommended health preventive behaviors would have less belief in chance as influencing health than those who had not initiated behaviors. This premise was examined on four types of preventive behavior and then analyzed with the *t*-test. The four preventive health behaviors included decreased drinking, weight loss, seatbelt use and exercise. Subjects who initiated preventive health behaviors were measured again for the behavior at 3 months and at 6 months.

Decreased drinking was the only behavior that was significant for the CHLC between the subjects that had a

history of preventive health behavior and those who had no history of preventive health behaviors. Hypothesis three was not fully supported since significance was not established between groups with the other preventive behaviors. There was, however, one unsuspected significant finding. Examination of the PHLC and IHLC scales between group-related behavior revealed subjects who acted upon the weight loss recommendation had higher IHLC than those who had not initiated the behavior ($p < .03$).

Although the findings of this study were interpreted cautiously in light of possible limited external validity, along with the limitations of self-reported data, a few findings warrant further research. Support for the first hypothesis indicated that there was not an exclusive conceptual relationship between the CHLC orientation and an individual's potential for preventive health behavior. Both groups of subjects had a high IHLC score, with those individuals with a history of preventive health behaviors having higher IHLC scores than those without a history of preventive health behavior. Additionally, individuals with no history of preventive health behaviors had more PHLC than those with a history of preventive health behaviors. The conclusion drawn by Zindler-Wernet and Weiss (1987) was that level or magnitude of Internal Health Locus of Control beliefs are most closely associated with the potential for preventive health behavior, although the CHLC and PHLC also were relevant measurements.

When the subject's belief to initiate recommended preventive behaviors was reviewed, the results were more complex. There was no association of MHLC beliefs between the groups of specific behaviors, thereby supporting that the MHLC scores were unique to particular preventive health behavior. There was an association between the decision to initiate a specific health preventive behavior, MHLC orientations, and selected psychosocial variables. The researcher recommended future studies be designed to include specific preventive health behaviors, while including other possible influential variables.

The Zindler-Wernet and Weiss study indicated preventive health behaviors were more likely to hold IHLC orientations. The inference drawn from this study was that women with an IHLC participated in more preventive health behavior. Therefore, young women with higher IHLC scores would have engaged in more preventive health behavior, resulting in fewer preventable diseases, such as, an STD.

Independent Variable

Whately (1991) examined LOC as an independent variable in relation to persons exhibiting high-risk behavior. In Whately's (1991) review of the literature, risk taking was found to be the primary cause of morbidity and mortality in young adults. Based on the literature then, Whately's study was conducted to determine if HLOC and social network were predictive of risk-taking in the adolescent population.

Subjects were recruited on a volunteer basis from four nonacademic lunch-study hours at a large, low-middle income suburban high school (N=197).

The instruments used for data collection were the Multidimensional Health Locus of Control (MHLC), Norbeck Social Support Questionnaire (NSSQ), the Risk-Taking Questionnaire (RTQ), and a research developed demographic form. The first three were standardized instruments with acceptable Cronbach reliability coefficients for this sample.

Whately's study attempted to answer two research questions: 1) To what extent was adolescent risk-taking related to HLOC and social network? and 2) What were the characteristics related to risk-taking behaviors in adolescents? Multiple regression analysis was utilized for determining the relationship between the independent variables, HLOC and social network on risk-taking behaviors. Twelve percent of the variance in risk-taking scores was attributable to two of the MHLC variables and the NSSQ (social network). The MHLC variables included the PHLC (powerful others) and IHLC (internal). PHLC scores accounted for the highest percentage of risk-taking behavior variances at 9.2%. NSSQ scores indicated adolescents identified 10.6 people important in their social network, although the researcher speculated this peer group influence lessens in late adolescence. The conclusion drawn by

Whately was that the PHLC orientation was an independent predictor of at-risk behavior, and that additional research needed to be conducted on various at-risk populations. This study was conducted to extend research on a population of women involved with at-risk behaviors as evidenced by the presence of an STD.

In another study involving beliefs and health behaviors, Aruffo, Coverdale, Pavlik, and Vallbona (1993) sought to determine the health locus of control (HLOC) scores regarding AIDS transmission knowledge and its prevention in a low socioeconomic, minority population. The subjects (N = 587) were selected by convenience from four of the eight community primary care health centers in a southwestern city. Structured interviews were conducted over a three month period. The sample was fifty percent Hispanic and twenty-five percent black, with a mean age of thirty two. Individuals of hispanic origin were interviewed using their language preference. An AIDS knowledge questionnaire and the HLOC instrument were utilized for data collection.

Since the sample was multiethnic, Aruffo et al. (1993) assessed reliability with Cronbach's Alpha for AIDS knowledge. Cronbach's Alpha was consistent for different ethnic groups. White respondents had lower HLOC scores, thereby having more internal HLOC than the other ethnic groups. Multiple regression and univariate analysis were

utilized to evaluate variables for significance. AIDS knowledge was significantly related to educational level, hispanic origin and HLOC scores. Univariate analysis confirmed that higher internal LOC and higher educational level were predictive of more AIDS knowledge.

Although Aruffo et al. (1993) concluded the study is limited only to AIDS knowledge and not behavior in this minority population, implications for educational and preventive interventions can be drawn. The externally oriented subjects, those subjects with low HLOC scores, also had less AIDS knowledge. The significance of this study was that low or external HLOC scores were associated with less AIDS knowledge. Thus, the HLOC scores may be used as a screening tool in individuals with less AIDS knowledge in minority populations (Aruffo et al., 1993).

In another study Wassem (1991) explored health orientations and health outcomes. Wassem (1991) investigated the relationship between health locus of control and the course of multiple sclerosis (MS). The purpose of the study was to understand how HLOC orientations, the independent variable, would influence both the knowledge of MS and the use of individual self-care practices on the ultimate outcome of MS. The outcome of MS was measured by the magnitude of disability associated with the disease.

From a MS support group membership list, potential subjects were selected from a table of random numbers. A letter was sent to all MS support group members explaining the study, and inviting them for participation. Potential subjects were then selected from a table of random numbers until one hundred subjects gave consent for participation.

Data collection was performed by a single researcher in the individual subjects' homes. The study's instruments included the HLOC scale, the Disability Status Scale (DSS) and a researcher-developed personal inventory scale. The DSS scale, a standardized instrument, measured the disability in MS. The personal inventory scale determined knowledge of MS and the level of information related to self-care practices.

Three of the four hypotheses were supported by the data analysis. Subjects with an internal HLOC orientation were more knowledgeable about MS, participated in more self-care activities and had a more benign disease course than those who were more externally oriented. The unsupported hypothesis, respondents who had MS for less than five years were more externally oriented than respondents with MS for more than five years, was consistent with the previous literature, and was not relevant to this researcher's study.

The study's hypothesis, internally oriented persons with MS prefer to be more involved in their care and seek information regarding MS, was supported. Conversely,

externals were more reliant on others to tell them what to do to improve their condition. Subjects with internal health locus of control orientations were associated with more individual interest in participating in their own care, which resulted in better health outcomes (Wassem, 1991). However, since externals were less interested in participating in their own care, the theoretical implication can be drawn that they did not perceive individual behavior as having an effect on the health state, and ultimately had a poorer health outcome. Wassem (1991) concluded rehabilitation nurses should tailor rehabilitation programs to the individual's locus of control orientation. This may affect the adherence level and result in an optimal course for the patient's rehabilitation, and a less morbid disease course.

The review of the literature from the National Library of Medicine, bibliographies, texts, and government documents revealed that LOC is an important variable in preventive and risk-taking behavior in varying populations. Fleming and Barry's (1991) study found that in a primary care population, the CHLC was the belief orientation in persons with alcoholism, as compared to non-alcoholic persons. In a study by Zindler-Wernet and Weiss (1987), persons with a history of preventive health behaviors were least likely to hold the CHLC orientation, or less belief in chance influencing health outcomes. In Wassem's (1991) study,

persons with MS who held an Internal Health Locus of Control belief were more involved in their care, and had a less morbid disease course, whereas Externals were less involved and had a more severe health outcome. Aruffo et al.'s study (1993) found significance between an external locus of control and less AIDS knowledge in a minority adult population. In Sandler et al.'s (1992) study, adolescent females not using contraception consistently were found to have more external locus of control than adolescent females who did use contraception consistently. And finally, Whately's study (1991) found that the PHLC belief accounted for the highest percentage of risk-taking behavior, as opposed to social network in an adolescent population.

In summary, IHLC orientations are most associated with preventive health behaviors and more healthful states, while PHLC and CHLC beliefs have been correlated with more at-risk behaviors and less healthful outcomes. It was also evident that few studies were conducted with at-risk behavior and health LOC beliefs in young women. None of these studies conducted research utilizing the MHLC concept and high-risk behavior among young women. The need to explore health beliefs among populations of young women exhibiting at-risk behaviors was evident. This study was conducted to describe the MHLC orientations in populations of young women with an STD compared to women without an STD.

Chapter 3

The Method

This descriptive study identified and compared MHLC measures in women with and without sexually transmitted diseases. The purpose of this study was to describe and classify health locus of control measures in women with varying states of health. A descriptive design was appropriate for this study because the purpose was to identify and compare the health belief in women with and without STD's.

The dependent variable was the Multidimensional Health Locus of Control (MHLC) measurements. These measurements included the following: Internal Health Locus of Control (IHLC), Powerful Others Locus of Control (PHLC), Chance Health Locus of Control (CHLC).

The independent variable was the health status, that is, presence or absence of a sexually transmitted disease. The controlled variables included age and sex. Intervening variables may have been truthfulness and time constraints. Variables of interest included the demographic data and measures of self-efficacy.

Setting, Population and Sample

Each county varied with respect to the economical base. Two counties were based on manufacturing and agriculture while one had a mixed economical base of manufacturing and forestry (Columbus-Lowndes, Macon-Noxubee, and Louisville-Winston Chambers of Commerce, secretaries, personal communication). The populations for the three counties are similar with respect to socioeconomic status and race. Average individual disposable incomes for each of the counties were $11,108, $8,600, and $11,796. Total populations for each county were 23,799, 12,604, and 19,434, respectively, for Lowndes, Noxubee, and Winston counties. Racial breakdowns for the three counties were 38%, 68%, and 45% African-American, with the remainder of the statistics reflective of Caucasians. The separate public health clinics serve the residents for that county.

The setting for this study was in County Health Departments in the District IV area of northeast Mississippi. Public health clinics in District IV provide services related to the Women, Infants and Children (WIC) program, family planning, STD clinic and general medical care for each of the three counties. Study sites included separate clinics within three county health departments providing services only related to family planning, women's health, or an STD, all by a single health provider. Services at the specific clinics were provided by nurses and

a nurse practitioner. Recipients of care are primarily within a racial minority, and of lower socioeconomic status, therefore being a fairly representative sample of the community. Approval of data collection was secured from the Mississippi State Department of Health (see Appendix A) and verbal approval from individual supervisors at the separate clinics.

The population under study was women between the ages of 18 and 25 who were seen either by appointment or on a walk-in basis at the public health department. Services provided to the women included family planning and/ or services related to gynecological care. The sample of convenience consisted of 33 volunteers who were in the clinic waiting for a medical visit. All volunteers who met the criteria and agreed to participate were included.

Method of Data Collection.

Approval to conduct the research was secured from the Mississippi University for Women on the Use of Human Subjects and Experimentation (see Appendix B). The Mississippi State Department of Health also gave approval to conduct this research in a District IV county health department. Supervisors at the public health departments were contacted one week prior to data collection for approval of the research at the individual facilities, whereupon verbal approval was secured.

At the time of testing, the investigator read aloud the Informed Consent Form (see Appendix C) to the potential participants in the public health clinic. Women who were willing to participate were asked to sign the consent form. The consent form was separate from the actual instrument of data collection and was subsequently shredded. Next each subject was presented a packet for completion, including the Demographic Data Sheet (see Appendix D), MHLC/Self-Efficacy Questionnaire (see Appendix E) and STD Criteria Form (see Appendix F) which had been previously numerically coded to maintain anonymity. The coded Demographic Data Form and MHLC/Self-Efficacy questionnaire, attached to the outside of a manila envelope, were given to the subject who was instructed to return the completed questionnaire to the investigator. Subjects took approximately 15 minutes to complete this process. The coded STD Form was placed on the inside of the patient's chart. The provider of care responded on the coded form indicating if the subject had or had not been diagnosed with an STD on that visit. These forms were placed in a manila envelope by the provider and were returned to the researcher at the end of the day.

Data were categorized into two groups on the basis of the independent variable, STD versus no STD, as follows: Group 1 (n=29) had no diagnosis on that clinic visit and had no prior history of an STD as reported with a negative response to question 7 on the demographic data sheet; and

Group 2 (N=4) was diagnosed with an STD on that visit to the clinic. Inclusion into Group 2 was not dependent on a prior medical history of STD's. Positive responses, or prior history of STD's were ineligible for inclusion to either group. Data collection was from May 3, 1994, to June 15, 1994.

Instrumentation

The instruments utilized in this study included the Multidimensional Health Locus of Control (MHLC) questionnaire and two researcher developed tools, a demographic questionnaire and a Self-Efficacy measurement. The MHLC is a graded response, eighteen item questionnaire, divided into one internal, and two external scales (Wallston et al., 1978). Each item utilizes a six point Likert-type scale ranging from "Strongly Disagree" (scored as one) to "Strongly Disagree" (scored as six). Approval to use and reproduce the MHLC Form A in this research was obtained from Dr. Wallston (Appendix G).

The three scales, Internal Health Locus of Control (IHLC), Powerful Others Health Locus of Control (PHLC), and Chance Health Locus of Control (CHLC) are composed of six questions for a total of eighteen questions. The IHLC construct measures the extent to which individualized behavior influences health outcomes. Purely internally oriented persons, those with high scores on the internal health locus of control scale, believe health outcomes are a

direct result of his/her own behavior. External orientations are measured on two scales, the PHLC and CHLC. Externally oriented persons scored highly on either the PHLC, CHLC, or both. The PHLC scales measures the degree to which an individual believes health outcomes are dependent on powerful others, such as doctors, nurses, family, friends. The CHLC scale measures the degree to which an individual believes health outcomes are purely a matter of chance, luck or fate (Wallston et al., 1978).

Alpha reliabilities cited for the scale by Dr. Wallston were: IHLC, a = .767, PHLC, a =.673, and CHLC, a = .753. These reliabilities exceeded those of the original HLOC instrument and were more soundly based on a more representative or randomized sample (Wallston et al., 1978).

The MHLC scale measures the degree of belief that health outcomes are a result of individual behavior. In order to more fully explain health behavior, demographic factors and health states also were included in data collection. Self-reported health history and present health states indicate the variance in health behaviors. These contributing factors shed light on the beliefs in health locus of control. The MHLC orientations, thought to be relatively stable over time, were compared with the independent variable, STD or no STD. Additionally, variables of interest were assessed for an interactive

effect with MHLC scale measurements, thereby reflecting the variation in health behavior. Ultimately, the retrospective implication between the relatively stable MHLC and health states is drawn.

The score on each scale is the sum of the values circled for each item in that scale. Each item was individually scored and tabulated as IHLC, CHLC, and PHLC. Questions 1,6, 8, 12, 13, 17, were internal items, questions 2, 4, 9, 11, 15, and 16 were chance items, and questions 3, 5, 7, 10, 14, and 18 were powerful others items. Total scores ranged from 18 to 108 possible points. High scores on any particular scale indicate the predominant belief orientation for that individual.

The demographic form requested information regarding age, race, marital status, educational level, income level, occupation, and STD history. The instrument was a self-report of pertinent data pertaining to the characteristics of the subjects. The Self-Efficacy measurement question is a one item estimation of the patient's likelihood of succeeding in the behavior related to disease prevention.

Another aspect of personal control was Self-Efficacy. The subject's response, an (X) on a 10 centimeter line, was measured with a ruler. This measure in centimeters was converted to a percentile.

Data Analysis

Descriptive statistics of means and standard deviation were used to describe age, sex, marital status, race, socioeconomic status, educational level, past and current medical history, and measurements of MHLC and Self-Efficacy. An item-by-item analysis utilizing the two-tailed *t* test was used to pursue the null hypothesis concerning locus of control and health status. Analysis of variance was utilized to analyze the mean MHLC scale scores for Groups 1 and 2. The level of significance was set with alpha = .05. A frequency distribution was used to arrange IHLC, CHLC, and PHLC means and standard deviations for group 1 and 2. Differences between the two groups were analyzed on the three measures of locus of control and demographic data. A comparison was made of locus of control scale measures and health status for the two groups. The ANOVA procedure was utilized for this analysis, to reject the null hypothesis. The level of significance was set at .05 alpha.

Summary

The descriptive research included 33 women between the ages of 18 and 25. Variables of interest were health-belief orientations and health states. Measures were obtained for these variables with the following: the MHLC instrument, Self-Efficacy question, item seven on the Demographic Data Form and the item response to Current Health Status.

Chapter IV
The Findings

The purpose of this study was to determine if there were differences in Multidimensional Health Locus of Control Scores for women with sexually transmitted diseases when compared to women without sexually transmitted diseases. This chapter presents a description of the sample, including demographic variables, results of the data analysis to test the study's hypothesis, and additional findings.

Description of the Sample

This study consisted of 33 women who were sampled by convenience from Public Health Departments in three counties in northeast Mississippi. All of the young women were receiving some type of service provided by a Nurse Practitioner at one of the County Public Health Departments. The subjects ages ranged from 18 to 25. The mean age of the sample was 20.79. The mean age for Group 1 was 20.86 years and 20.25 years for Group 2. Most women were black (87.9%), single (93.9%), and 57% of the sample were high school graduates. Employment status was almost evenly divided with 48.5% of subject employed, and 51.5% without employment. Additionally, 60.6% of the sample had a household income of $10,000, or less.

The sample for this study was categorized into two groups. Group 1 of women included (n = 29) who had no sexually transmitted diseases on that visit to the health department. Data from young women (n = 4) diagnosed with a sexually transmitted disease were subsequently categorized into Group 2. The sample demographics for the two groups are summarized in Table 1.

Table 1

Summary of Sample with Regard to Race, Marital Status Educational Level and Income Level in Young Women With and Without a Sexually Transmitted Disease Using Frequencies and Percentiles

	Group 1[a]		Group 2[b]	
Variable	n	%	n	%
Race				
African-American	26	89.6	3	75.0
Caucasian	3	10.3	1	25.0
Marital Status				
Single	28	96.5	3	75.0
Married	0	0.0	0	0.0
Divorced	0	0.0	1	25.0
Widowed				
Educational Level				
Some Grade School	1	3.4	0	0.0
Grade School Graduate	0	0.0	0	0.0
Some High School	3	10.3	1	25.0
High School Graduate	16	55.1	3	75.0
Some College	7	24.1	0	0.0
College Graduate	3	10.3	0	0.0
Income				
$0 - 5,000	10	38.4	2	50.0
5,001- 10,000	8	30.7	0	0.0
10,001- 20,000	4	15.3	0	0.0
over 20,000	12	15.3	1	25.0
no answer	3		1	

a: Group 1: Women without STD, n = 29. b: Group 2: Women with STD, n = 4.

Results of Data Analysis

Using the MHLC form A and demographic data sheet, data were collected to test the null hypothesis: There are no differences in MHLC scales of IHLC, PHLC and CHLC scores

when comparing young women with and without an STD. The researcher developed three directional hypotheses which proposed that women with an STD would have more external LOC, as reflected in a higher PHLC or higher CHLC measurement.

The following mean MHLC scale scores were obtained for Group 1 and Group 2: IHLC scores: no STD 24.55, positive STD 28.25; PHLC scores: no STD 20.24, positive STD 24.50; and CHLC scores: no STD 19.41, and positive STD 24.75. Due to the fact that the sample size for Group 2 was small in size, data were more fully evaluated by performing a matched comparison analysis on all subjects in that group. These four paired samples were analyzed for the two groups of subjects. Statistical data for each scale using a *t*-test for the two groups of matched pairs are presented in Table 2.

Table 2

Comparison of IHLC, PHLC and CHLC Scores of Matched Pairs of Young Women Without an STD and Young Women With an STD Using the t-Test.

Variable	Group*	n	M	SD	t
IHLC	1	4	22.50	5.26	-1.50
	2	4	28.25	3.50	
PHLC	1	4	17.50	6.45	-1.79
	2	4	24.50	6.55	
CHLC	1	4	15.25	3.09	.085
	2	4	24.75	5.56	
Self-Efficacy	1	2	95.50	2.12	.91
	2	2	76.00	28.28	

*Group 1 = No STD. Group 2 = + STD.

Since no significance on MHLC scales emerged, the researcher failed to accept the three directional hypotheses and failed to reject the null hypothesis. Young women diagnosed with an STD did not have statistically significant lower IHLC scores, or higher PHLC and higher CHLC scores.

Additional Findings

The literature supported the concept of Self-Efficacy also to be a factor related to health outcomes. Perceived self-efficacy, described with an (X) on a ten centimeter line, was measured as a percentile. Self-Efficacy for Group 1 was 78.5% and 52.6% for Group 2. Since $t(4) = .91$; $p = .53$, the researcher concluded there were no differences between Group 1 and Group 2 on the measurement of Self-Efficacy.

Summary

The majority (n =29) of the total sample of young women for this research was African American and single. For the group of women without STD's, the mean age was 20.86; for young women with STD's, 20.25. Eighty-seven percent of the subjects had at least graduated from high school and 82% had an annual household income level of less than $20,000. There were no significant differences in MHLC scores of young women with and without sexually transmitted diseases. The CHLC scale most closely approached the level of significance (p = .085).

Chapter V

The Outcomes

In spite of current preventive, educational and clinical measures, the incidence of STD's continues to rise. The consequence of morbidity and mortality associated with STD's among young, childbearing women is of great concern to health care providers. The purpose of this descriptive study was to gain a better understanding of young women's health locus of control as classified by those with an STD and those without an STD. The Health Belief Model served as the theoretical framework for this study.

The null hypothesis was there is no difference in MHLC scales on the IHLC, PHLC and CHLC when comparing young women with an STD to those young women without an STD. Health locus of control scores were measured using Wallston's Multidimensional Health Locus of Control Form A. Demographic and perceived self-efficacy data were collected by a researcher-developed questionnaire. Data were analyzed with descriptive and $\underline{t}$ - test statistics. This chapter includes a discussion of the findings of the study. The conclusion, implications for nursing and recommendations for future research also are presented.

Summary of the Findings

The subjects consisted of 33 young women, ages 18 to 25 years old, which were sampled by convenience from Public Health Departments in Northwest Mississippi. Data from subjects without an STD were categorized into Group 1 (n = 29) while Group 2 (n = 4) were women with an STD. Demographics from the group as a whole were fairly homogenous with respect to race, marital status, and income levels. Eighty-seven percent (n = 29) were African-American and 13% were Caucasian. Ninety-three percent were single (n = 31) and 72% (n = 24) had a household income level less than $20,000 per year. The mean age was 20.79. Most subjects (85.3%) were educated to at least the twelfth grade.

The Multidimensional Health Locus of Control Form A was utilized to measure Internal, Powerful Others, and Chance Health Locus of Control beliefs in this population of young women. Descriptive statistics and the two-tailed t test were used to analyze the data and test the hypotheses. Concurrent pairs were matched for all subjects in Group 2 (n = 4) to those subjects in Group 1 for the seven demographic variables; age, marital status, race, employment, educational level and income level. Three pairs matched on 5 out of the 7 possible variables, and one matched for all seven variables. The two-tailed t test procedure was run on

matched pairs (n = 4) to test the null hypothesis. Since no significant differences emerged on the IHLC, PHLC and CHLC for the matched-pairs from the two groups, the null hypothesis was not rejected. There is no significant difference in MHLC scores on the IHLC, PHLC, and CHLC scales between women with an STD and women without an STD.

Discussion

This study explored the demographic profile and MHLC orientations in young women with and without an STD. The findings of this study were that no significant differences existed in MHLC measurements on the IHLC, PHLC and CHLC scales between young women without an STD and young women with an STD. Each hypothesis and scale is discussed with possible explanations as to the results of this study.

Young women who have engaged in risky sexual behaviors may contract STD's. While this study did not measure health behavior directly, the health status was diagnosed among women who had received a pelvic examination as a part of the care. Statistical significance was not obtained for the sample of young women on the MHLC scales. One possible explanation that findings were inconclusive was related to the small sample size. Due to this limitation the researcher was unable to differentiate between Group 1 and Group 2 for two of the three hypotheses. Therefore, findings should be reviewed as indefinite and interpreted with caution.

Hypothesis 1 which stated that young women with an STD have a higher PHLC than women without an STD was not accepted. In a study by Whately (1991), the PHLC orientation had the strongest influence on adolescent risk-taking behavior. Similarly, the young women in this study may have possessed a PHLC orientation which involves the belief that doctors, healthcare professionals or some higher power dictated the ultimate health outcome, rather than their personal control. Therefore, the belief in outside powers eliminates the sense of personal high-risk behavior being associated with a transmission of an STD which may explain why subjects in Group 2 engaged in unsafe sexual practices and subsequently contracted an STD. Conversely, those subjects in Group 1 may have possessed the belief that they were in control and responsible for their health outcome and took measures to prevent contracting an STD.

Hypothesis 2 was that young women with an STD would have a greater belief in luck, chance, or fate being the controlling factor in the outcome of an STD, when compared to women without an STD. Although statistical significance ($p < .05$) was not obtained, the CHLC, an external locus of control scale, approached the set level of significance ($p = .085$). Individuals with Chance Health Locus of Control orientations essentially believe that health outcomes are not affected by their own behavior but rather by some other source, that is, chance, luck, or fate. The supposition can

be made that the young women in Group 2 did not believe that personal behaviors (at-risk sexual activity) had an impact on outcome (contracting an STD).

A strong relationship between external health locus and risky behavior was supported in one study by Sandler et al. (1993) who found that external locus of control was associated with contraceptive practices in adolescent females 12 - 16 years old. External locus of control scores were significantly higher in the sexually active group using contraception inconsistently compared with sexually active adolescents using contraception consistently ($p < .005$). The highly significant data supported that young women with less external orientations used contraception more consistently, thereby not attributing health outcomes to forces outside of individual control. Since other studies have shown statistically significant results with CHLC for persons exhibiting high-risk behavior (Fleming & Barry, 1991, & Aruffo, et al., 1993), the empirical evidence had supported this current study's hypothesis.

The researcher's speculative discussion relevant to hypothesis 2 is consistent with the HBM precept that individuals who do not perceive a threat to their health engage in behaviors that may be risky. Therefore, this researcher believes that women who perceive STD's are not under their control but under the control of luck, chance or fate, do not perceive the risky behavior as a threat to

their health. This underlying belief that chance, luck or fate are the controlling factors in contracting an STD precedes the associated high risk behavior. Persons with a Chance HLC hold the belief that STD's or other health outcomes are under the influence of chance and not personal control and, are less likely to perceive their risky behavior being associated with a potential STD or health threat. Thus, persons who believe chance or powerful others primarily dictate the outcome of an STD engage in more high-risk behaviors. This researcher contends the health belief that precedes personal behavior is an important consideration when addressing health preventive interventions (Rosenstock, I.M., Strecher, V.J., & Becker, M.H., 1988).

Hypothesis 3 stated that young women without an STD would have a higher IHLC than young women with an STD. This study also resulted in inconclusive results for this belief orientation. One study asserted a higher IHLC orientation was evident in adolescent women who practiced fewer high-risk behaviors than adolescent females who believed high-risk behavior was not associated with pregnancy/STD's (Sandler et al., 1992). Based on the literature this researcher believes this study may have resulted in conclusive findings with more subjects within Group 2.

Similarities in responses to the MHLC between the matched pairs of Group 1 and Group 2 may have been a result

of the Hawthorne effect. Although the researcher presented herself as uninvolved with the medical staff and clinic, the MHLC questions involved health-related beliefs. Within the clinic setting the subjects may have given expected rather than truthful answers. Clinics varied in the levels of privacy and the number of distractions. Therefore, the clinic setting may have affected the subjects' responses. Unfortunately due to the paucity of the data in Group 2, this supposition can neither be supported or refuted by previous studies.

Another possible explanation for the inconclusive findings may be attributed to the time limitations inherent to this particular study. This researcher was denied access to clients in one state system and found that navigating an additional Institutional Review Board (IRB) at a local level and the perceived sensitivity of the subject matter resulted in difficulty in implementation. There appeared to be a reluctance for IRB members to allow the researcher to have to access to client diagnoses. Although the methodology was meticulously designed to inflict no risk to the sample, the subject of STD's inherently diffused all sense of objectivity. This dilemma compounded the time constraints and resulted in another possible limitation, access to the site. As a result, another state system was contacted for permission to conduct the research. This researcher suggests that research be conducted at facilities with

higher numbers of STD's within a state system conducive to research.

Another possible reason for the findings may be related to the homogeneity of the group with respect to age, race and socioeconomic status. The age group was set at the 18 to 25 year range. Many potential clients were excluded due to the fact that they were minors. The subjects also were (87.9%) African-American and 72.7% had a household income of less than $20,000 per year. Although this was representative of the population that the health departments served, a more diverse group may have yielded more discriminant findings.

Additionally, the MHLC questionnaires were completely answered in approximately 15 minutes supporting the fact that participants in the study found the questionnaire easy to read and acceptable. While the MHLC questionnaire is an efficient, generalized health locus of control tool there may have been more accurate results with an instrument specific for high-risk behaviors or for women of minority populations. The MHLC has a well established validity and reliability for general health locus of control. However, this general instrument may have not yielded completely accurate results in this specific population of women.

Conclusion

Based on the statistical findings derived from this study, there was no statistical significance of MHLC scores

between young women with an STD and those young women without an STD. The researcher acknowledged the insufficient numbers in the sample as the primary limitation of the study and thereby concedes this to be a pilot study. The chance scale that approached statistical significance ($p = .085$) for women with an STD is consistent with the HBM's theoretical framework. Fewer health preventive behaviors were practiced by women who held the chance health locus of control as evidenced by the diagnosis of an STDs.

Implications for Nursing

Research. The lack of statistically significant findings from this study and the increased incidence of reported STD's support the fact that additional health behavior research needs to be conducted. While many studies have evaluated different health beliefs, health knowledge and practices among various populations, the review of literature revealed limited studies on how populations of young women attributed health outcomes. Although the matched-pairs were not statistically significant, the CHLC approached significance at $p = .085$. This scale may warrant further exploration within this population. Additional research utilizing the Health Locus of Control concept in this population remains valid. Therefore, further research into health orientations among young women may prove fruitful in nursing research, and ultimately in promoting healthier behavior.

This quantitative study focused on the specific concepts within the MHLC for populations of women with and without STD's. In the opinion of this researcher, the entirety of the phenomenon may be better captured through a qualitative study. The qualitative study may yield information unique to women with STD's, from which future interventions may be developed.

Practice. In order to prevent STD's in young women, the nurse practitioner needs to include health beliefs in the assessment of young women. Assessment of health beliefs on the internal, chance and powerful health health locus of control, are particularly relevant to the identification of persons who may be at high-risk for STD's. With an internal health locus of control persons generally believe that STD's are a result of their risky behavior. Educational interventions relevant to therapeutic treatment and information specific to preventive measures are the appropriate plan of care. However, persons who hold the chance or powerful others belief, that is, do not perceive STD's as a result of their behavior, need additional teaching and perhaps counseling interventions that enhance the seriousness of the threat or their high-risk behavior. Specific educational measures relevant to STD prevention also need to be employed as a part of the educational plan. Further, since the health locus of control concept is generalized to health behavior, it also may serve to

identify other high-risk behaviors and subsequent intervention measures.

Recommendations

The researcher recommends in light of the inherent constraints encountered in subject access, inability to predict the number of subjects with STD's, and the sensitivity of the subject matter, that such research be conducted under conditions with more time and resources. Surveying potential sites for the average age of the patients with STD's also may enhance the number within the sample or increasing the age range of the group of interest.

More specifically, the following recommendations are made for future research and nursing:

1. Replication of this study with a larger sample of subjects, representing more variation in race, socioeconomic status and educational level.

2. Development of a valid and reliable instrument for measuring locus of control specific to women with high-risk practices.

3. Implementation of qualitative research exploring health beliefs and personal characteristics of young women practicing preventive health behavior and of those young women engaged high-risk sexual behaviors.

4. Promotion of the Family Nurse Practitioner as a collaborating member on IRBs and an advocate for issues related to women's health.

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APPENDIX A

MISSISSIPPI
STATE DEPARTMENT OF
HEALTH

2423 North State Street
Post Office Box 1700
Jackson, Mississippi
39215-1700
601/960-7400
601/960-7948 FAX
J.E. Thompson, Jr., MD, MPH
State Health Officer

March 29, 1994

Ms. Susan Turnage
MUW Graduate Student
2511 St. Nick Drive
New Orleans, LA 70131

Dear Ms. Turnage:

We have reviewed your request to gather your data for your graduate research project in the County Health Departments within the District IV area and are pleased to tell you that it has been approved. Please go ahead and contact the county (ies) to schedule your time in the clinic. If you have questions about the counties or need local assistance, please call Dave Beck, District IV Administrator, ph. 323-7313. In the absence of a District Supervising Nurse, he had handled this request for me locally.

Thank you for submitting the request in a timely manner. I wish you much success with the study.

Sincerely,

Kaye Bender

Kaye Bender, RN, MS, Chief
Office of the State Health Officer

APPENDIX B

MISSISSIPPI UNIVERSITY FOR WOMEN
Columbus, MS 39701

Office of the Vice President for Academic Affairs
Eudora Welty Hall
P.O. Box W-1603
(601) 329-7142

March 15, 1994

Ms. Susan E. Turnage
c/o Graduate Nursing Program
Campus

Dear Ms. Turnage:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research under the following conditions:

Parental consent should be secured, if necessary, in all appropriate cases, as well as third party consent. The consent form should contain a statement that participation will not affect the standard of care. Because of the sensitive nature of this proposal, great care should be taken in maintaining confidentiality of the participants and in explaining that confidentiality to them.

I wish you much success in your research.

Sincerely,

Thomas C. Richardson
Vice President
for Academic Affairs

TR:wr

cc: Mr. Jim Davidson
Ms. Jeri England
Dr. Nancy Hill
Dr. Rent

APPENDIX C

Statement of Informed Consent

I have been asked to participate in a study designed to determine the way in which different women view certain important health-related issues. The questionnaire is a measure of my personal beliefs that may offer guidance for future interventions to benefit women's health.

My participation in this study is voluntary and will require about 15 minutes. I will be asked to fill out two forms about myself. I understand that participation in this study is voluntary, and I may withdraw at any time. All information I give is completely confidential, and my name will not be on the questionnaire nor the results. Each questionnaire will be assigned a number that only the investigator will have this code number. I understand there are no risks involved and participation will not in any way affect the care I receive.

I understand that I may withdraw from this study at anytime.

_____ _____

Signature of Participant Date

_____ _____

Signature of Researcher Date

APPENDIX D

Demographic Data Sheet

Directions: Please circle the number that best matches your answer.

1. How old are you? _____

2. What is your marital status?

1 (Divorced) 2 (Married) 3 (Never married) 4 (Widowed)

3. What is your race?

1 (Black) 2 (Hispanic) 3 (Oriental) 4 (White) 5 (Other)

4. Are you employed? 1 (Yes) 2 (No)

5. What is your level of education?

1 (Some grade school)
2 (Eighth grade graduate)
3 (Some high school)
4 (High school graduate)
5 (Some college)
6 (College graduate)

6. What is the yearly income level in your household?

1 (0 - 5,000) 2 (5,000 - 10,000) 3 (10,000 - 20,000) 4 (over 20,000)

7. Have your ever had any of the following medical conditions? (please circle all that apply)

1 (Gonorrhea) 2 (Herpes) 3 (Chlamydia) 4 (Bacterial vaginosis/gardinella)

5 (Papilloma virus/Genital warts) 6 (Syphilis) 7 (Hepatitis B) 8 (Chancroid)

9 (None)

APPENDIX E

MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL
MHLC Form A

IHLC__ PHLC__CHLC__

This is a questionnaire designed to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, then the lower will be the number you circle. Please make sure that you answer every item and that you circle only one number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. As much as you can, try to respond to each item independently. When making your choice, do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think we want you to believe.

	strongly disagree	moderately disagree	slightly disagree	slightly agree	moderately agree	strongly agree
1. If I get sick, it is my own behavior which determines how soon I get well again.	1	2	3	4	5	6
2. No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
3. Having regular contact with my physician is the best way for me to avoid illness.	1	2	3	4	5	6
4. Most things that affect my health happen to me by by accident.	1	2	3	4	5	6
5. Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
6. I am in control of my health.	1	2	3	4	5	6
7. My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
8. When I get sick, I am to blame.	1	2	3	4	5	6
9. Luck plays a big part in determining how soon I will get well.	1	2	3	4	5	6
10. Health professionals control my health.	1	2	3	4	5	6
11. My good health is largely a matter of good fortune.	1	2	3	4	5	6
12. The main thing which affects my health is what I myself do.	1	2	3	4	5	6
13. If I take care of myself, I can avoid illness.	1	2	3	4	5	6
14. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
15. No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
16. If it's meant to be, I will stay healthy.	1	2	3	4	5	6
17. If I take the right actions, I can stay healthy.	1	2	3	4	5	6
18. Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

Self-Efficacy Question

Directions: The last question is your estimate of your personal beliefs about illness. Estimate your likelihood of preventing illness by placing an (X) on the line below.

can prevent illness ——————————————— My actions cannot prevent illness

APPENDIX F

STD Criteria Form

yes _____ no _____

APPENDIX G

VANDERBILT UNIVERSITY
NASHVILLE, TENNESSEE 37240
TELEPHONE (615) 322-7311

Health Care Research Project * School of Nursing * Direct Phone 343-3317

To: Fellow Health Researcher
From: Kenneth A. Wallston, Ph.D.

Thank you for your interest in the Health Locus of Control Scales. Please excuse this form response, but I have so many inquiries requiring similar replies that I have found this to be an efficient means of disseminating information.

You have my permission to utilize Form A or B of the MHLC scales in any health related research you are doing. My only request is that you keep me informed of any results you obtain using the scales. In that way I hope to continue to serve as a clearinghouse for information about the scales.

We have recently developed Form C of the MHLC scales, an instrument which can easily be made specific to any existing medically-related condition which your subjects might have (e.g., diabetes, cancer, high blood pressure, migraine headaches, arthritis, chemical dependencies, etc.) We have used Form C as an "Arthritis Locus of Control Scale" and are generally pleased with its psychometric properties. If you think such an instrument would be helpful in your research and if you are willing to share your data back with us, we would be pleased to make it available to you.

If you wish us to send you additional material, please complete and return the enclosed form. For most items there is a small charge to cover duplication and postage.

If you have more specific questions, don't hesitate to contact me. Please remember to send me information on any use you make of these scales. I have included a usage questionnaire to facilitate your doing so. I look forward to hearing from you.

P.S. I have enclosed a copy of a brief article I just wrote on the importance of placing measures of Health Locus of Control in a Theoretical Context. I hope you find it interesting and stimulating.

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